

10/527125

Rec'd PCT/PTO 08 MAR 2005

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
25 March 2004 (25.03.2004)

PCT

(10) International Publication Number
WO 2004/025405 A2

(51) International Patent Classification⁷:

G06F

(74) Agents: TRIPOLI, Joseph, S. et al.; Thomson Licensing Inc., Suite #200, Two Independence Way, Princeton, NJ 08540 (US).

(21) International Application Number:

PCT/US2003/028275

(81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

(22) International Filing Date:

10 September 2003 (10.09.2003)

(84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

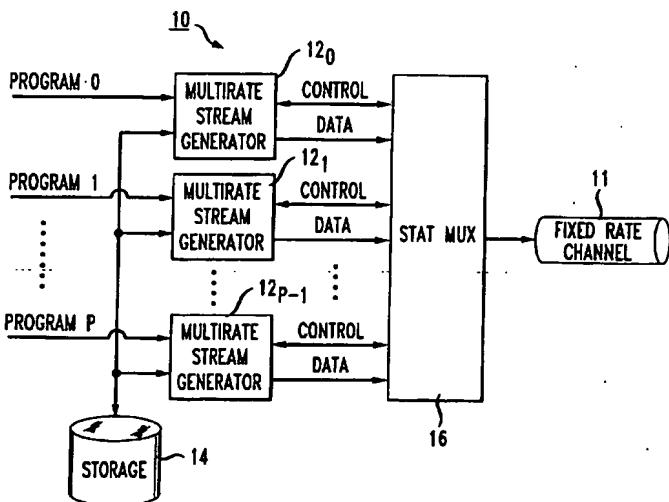
60/409,645 10 September 2002 (10.09.2002) US

Published:

— without international search report and to be republished upon receipt of that report

{Continued on next page}

(54) Title: VIDEO ON DEMAND SERVER SYSTEM AND METHOD



WO 2004/025405 A2

(57) Abstract: A Video-on-Demand Server architecture (100, 200, 300) transmits a plurality of pre-coded programs having different bit rates across a fixed bandwidth channel (11). For each program, a generator (120-12P-1, 110, 210) generates a plurality of different bit rate representations for each program. Each generator also provides control information at each of a plurality of successive time windows T for each bit rate representation. The control information provides a bit rate and a quality measure during each time window T. The control information enables a statistical multiplexer (16, 160, 260) to select a bit rate representation for each program during each time window T to maximize the quality of the selected representations while not exceeding the total available channel capacity.

BEST AVAILABLE COPY

WO 2004/025405 A2



For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

PCT New International Application Inventory of Unscannable or Missing Items	
	Serial Number

Check This Column if Item Is Present	Item	Check This Column if Item Is Missing on Filing
<input checked="" type="checkbox"/>	Return Receipt Postcard	
<input type="checkbox"/>	Check (amount \$ _____)	<input checked="" type="checkbox"/>
<input checked="" type="checkbox"/>	PCT-EASY Diskette	
<input type="checkbox"/>	DNA Diskette	
<input type="checkbox"/>	Exhibit	
<input checked="" type="checkbox"/>	Express Mail Label or Envelope	
Applicant Supplied Priority Document		
<input type="checkbox"/>	Other (specify) XXXXXXXXXXXX XXXXXXXXXXXX XXXXXXXXXXXX XXXXXXXXXXXX XXXXXXXXXXXX XXXXXXXXXXXX XXXXXXXXXXXX XXXXXXXXXXXX	XXXXXXXXXXXX XXXXXXXXXXXX XXXXXXXXXXXX XXXXXXXXXXXX XXXXXXXXXXXX
<input type="checkbox"/>	Cover Letter	
<input type="checkbox"/>	Other (specify)	

Winword/P4.5 Automation/Unscanned inventory - sep sheet

BEST AVAILABLE COPY

10/527125

Rec'd PCT/PTO 08 MAR 2005

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US03/28275

A. CLASSIFICATION OF SUBJECT MATTER

IPC(7) : H04N 7/173
 US CL : 725/87, 90, 91, 95, 96

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
 U.S. : 725/87, 90, 91, 95, 96

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched
 None

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)
 Please See Continuation Sheet

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category *	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	US 6,385,771 B1 (GORDON) 07 May 2002 (07.05.2002), Figs. 1-6, and column 2, line 58 to column 3, line 25.	1-3, 10-17, 22.
Y	US 6,246,695 B1 (SEAZHOLTZ et al.) 12 June 2001 (12.06.2001), column 2, line 50 to column 3, line 64.	1-3, 10-17, 22
Y	US 5,812,786 A (SEAZHOLTZ) 22 September 1998 (09.22.1998), column 2, line 46 to column to column 3, line 64.	1-3, 10-17, 22.
Y	US 5,926,649 A (MA et al.) 20 July 1999 (20.07.1999), column 6, line 30 to column 7, line e18.	1-3, 10-17, 22.
Y	US 5,940,738 A (RAO) 17 August 1999 (17.08.1999), column 2, line 35 to column 4, line 35.	1-3, 10-17, 22.

 Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance
 "B" earlier application or patent published on or after the international filing date
 "L" document which may throw doubt on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)
 "O" document referring to an oral disclosure, use, exhibition or other means
 "P" document published prior to the international filing date but later than the priority date claimed

"T"

later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X"

document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y"

document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&"

document member of the same patent family

Date of the actual completion of the international search

Date of mailing of the international search report

13 May 2004 (13.05.2004)

04 JUN 2004

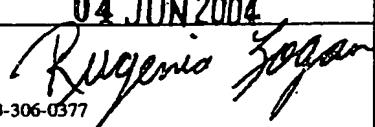
Name and mailing address of the ISA/US

Mail Stop PCT, Attn: ISA/US
 Commissioner for Patents
 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 Facsimile No. (703) 305-3230

Authorized officer

KRISTA BUI

Telephone No. 703-306-0377



Form PCT/ISA/210 (second sheet) (July 1998)

BEST AVAILABLE COPY

INTERNATIONAL SEARCH REPORT

PCT/US03/28275

Continuation of B. FIELDS SEARCHED Item 3:

EAST.

Search terms: VOD, video on demand, different bit rate, variable rate, fixed bandwidth, bandwidth, channel, program, signal to noise, S/N, SNR, ratio, index, pre-coded, quality, encoder, digital, stream/streaming, and peak signal.